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ABSTRACT

Television coverage of the 1972 Presidential Conventions was a complicated, time consuming, exhausting and yet challenging task for the Public Broadcasting Service (PBS). Operating on limited funds and borrowed equipment, PBS had to literally throw together its operation in Miami Beach and still keep tabs on the candidates wandering around the country. The author, an engineering manager with KCET-TV in Los Angeles, outlines the engineering gymnastics that PBS had to go through to provide the coverage necessary. The video equipment, telephone communications, power requirements, and remote set ups are described in careful technical detail. (MC)

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My presentation today is on the Public Broadcasting Service participation in the NPACT coverage of the political primaries and the two and one half national conventions.

Robert R. Stone, KCET, Los Angeles

National Public Affairs Center for television requested PBS to assist them in their proposed coverage of the forthcoming Democratic and Republican National Conventions. Jim Karayn, President, and Daryl Griffin, Executive Producer, Special Events for NPACT, and myself, Technical Coordinator for Production Centers for PBS, began to hold preliminary meetings in Washington; making surveys to San Diego, California and Miami Beach, Florida. Of course, the survey to California was made prior to Dida Beard's infamous ITT memo. So....on to Miami Beach.

At this time there were no plans for primary coverage at all. As the political campaigns began with the New Hampshire Primary and Humphrey, Muskie, Wallace, Jackson, Lindsay and McGovern, generating national interest, NPACT decided to get their feet wet in the next primary coming up in Florida.

On the afternoon of Wednesday, March 8th, I received a phone call from Daryl Griffin requesting that I hop the next available plane to Miami and make preparations to put in motion NPACT's first primary coverage the following Tuesday, using the local PBS station, WPBT's remote unit and personnel.

The format was established in placing Sander Vanocur and Robin MacNeil, Senior Correspondents for NPACT, at an anchor desk in the news room of the Miami Herald. In addition, we would be a full member of Pool facilities with CBS, NBC, and ABC. Pool would distribute audio and video feeds from the six major candidate's locations in Miami and Orlando. These six feeds, plus our own telephone communications within our remote units and the news room - anchor desk, necessitated a fast trip to the Marketing Division of Southern Bell Telephone. We learned of a 3 P.M. deadline for any new orders on all private lines, business phones and most importantly Vandas, local audio and video circuits. Phil English, Manager of Broadcast Operations, PBS in Washington, was contacted immediately with our SOS to order the Vandas and inter-connecting long lines, IXC's, through the PBS AT&T representative. I immediately wrote up local telco orders for the six remotes. Somewhat hampered by the fact that time and the 3 P.M. deadline had not allowed me to actually see the sites in question.

Each of the six remotes set-up consisted of:

1 - Unilateral telephone
2 - IFB or Interrupted Feed-back, Schedule D audio return line

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In order for us to distribute the Pool feeds, we would be required to pick-up all signals from the Pool distribution point in a local hotel to our remote unit at the Miami Herald News across town. As PBS was in the process of buying a Grass Valley 1400 Audio-Video Switcher for their Network Center installation in Washington, I contacted Dan Wells, Director of Engineering and Technical Operations for PBS, with a request for the switcher and the help of Bob McCormack, Senior Project Engineer for PBS in Washington. Bob set the switcher up for operation in Miami in the ABC Coord Studio right out of the Grass Valley packing crates. Miraculously, this worked out. We used the ABC repeat monitors to watch the incoming six remotes and switched accordingly.

As there were insufficient video tape machines in the WPBT remote unit we added the Miami Tele Production Commercial unit with two additional VTR machines and lashed the two units together. Merle Thomas, Technical Supervisor for PBS in Washington was flown in to assist me in getting these VTR's functional.

Somehow, with the numerous complexities and chaos in attempting coverage of this magnitude and late date; we did, in fact, have a show at air. However, it was almost a disaster, due to totally inadequate distribution and communication facilities.

Upon my immediate return to PBS in Washington, a post-mortem was held with Dan Wells, Gene Swanzy, Manager of Technical Operations for PBS and Bob McCormack. Our unanimous conclusion was: generally, most remote units are not designed to accomodate a complicated type of news production as required by NPACT. We established, at this meeting, the following priorities:

1 - Audio, video and monitor distribution system
2 - An IFB system

Bob McCormack and I had but two short weeks to design and put into operation a full distribution system for the next primary coming up in Milwaukee, Wisconsin.

In two weeks the whole staff at PBS burned the midnight oil and completed this elaborate system.

The systems consisted of:

The Audio Rack - Top: (1) McCurdy Extender Range Vu Meter, (2) A Bank of Volume Controls, (3) Patch Bay, (4) Six Automated Process DA's, (5) Two Automated Process Bridging Amps, (6) Two Automated Process Monitor Amps, (7) Audio Oscillator, (8) The Power Supply.

The Video Rack - Top: (1) Tektronix 529 WFM, (2) Tektronix 520 Vectorscope, (3) Patch Bay, (4) Seven Grass Valley Differential Inputs - DA's, (5) Seven Grass Valley Differential Input Clamping DA's, (6) Three Grass Valley 940 Processor Systems, (7) Three Control Concepts Automatic Video Delay Lines.

IFB is used by director and producer to feed program and cue information to the talent and guests via telex ear pieces. This IFB system consisted of: (1) an input selector taking program levels from -30 to +10 DB, feeding the inputs of two automated processes' 325 distribution amplifiers with three outputs each to the six selector switches which interrupted each of the six program feeds individually. There was a seventh switch for an all call which interrupted all program feeds at once. It would be impossible to do live news coverage without an IFB system.

During this two week construction interim, I flew to Milwaukee to meet with Harold Wagner, Chief Engineer of WMVS. Initial contact was also made with the Wisconsin Bell Telephone Company to set up NPACT's requirements for this primary.

The NPACT format would be changed considerably, the Milwaukee Journal news room would remain the anchor desk for Sandy Vanocur and Robin MacNeil; WMVS Master Control and Studio were to be our control point and transmission areas, respectively.

On March 29th, I returned to Milwaukee, in the middle of a snow storm, to reconfirm our prior arrangements at WMVS and Wisconsin Bell Telephone. Also, to anxiously await the arrival of PBS' newest baby.....two six foot distribution racks and an IFB system. Due to the storm, all airlines were delayed one day. We were now three days away from the Wisconsin Primary. Finally, after many anxious moments, our new equipment arrived, intact.

PBS engineering had made the decision that due to many member stations delaying broadcasts, we would have to maintain syncronous switching between remote points. We learned through King Harrison, Chief Engineer for WETA in Washington, D.C., that the New York State Network had a number of 2.5 Sulzer Oscillators, and they were available.

The 2.5 Sulzer is the forerunner of the Rubideum system currently in use by the commercial networks. John Lentz, PBS Consulting Engineer and I outlined a system of syncronous switching by placing one of the Sulzer units at each of the remote locations. Although the Sulzer system is somewhat crude in this application,

because it requires approximately six to eight hours to warm up before the frequency will settle down. We made this system work with the addition of Control Concept's three AVDL's. The Sulzer's and AVDL's were the main stay of our syncronous system.

I wish you could have heard the extraordinary telephone conversations between us in Milwaukee and each remote site, repeatedly, to slew in each Sulzer to maintain frame and color lock.

Again, NPACT was a member of Pool: therefore we ordered two zero timed video lines from Pool Headquarters at a local hotel from Wisconsin Bell Telephone. Our concept was to color lock WMVS to one of the incoming Pool feeds and slew all other incoming remotes to match. One of the Pool remotes had a great deal of trouble locking up. As a matter of fact, they never made lock for the entire evening, consequently, that feed had to be taken nonsyncronously. Incredibly, without any prior testing or proving ground, everything worked. With one exception, human error. Our producer gave Pool a "Goodnight" when we were through using Pool facilities, not realizing that we were sync locked: when Pool dropped their feed, WMVS sync lock went out the door. Another lesson learned the hard way. Which leads us into the Massachusetts Primary.

Preliminary surveys indicated we would use Boston's WGBH facilities under the direction of Tom Keller, Director of Engineering. We re-established our successful format used in Milwaukee by setting the NPACT anchor desk in the news room of the Boston Globe. We used a commercial unit at that remote site, due to WGBH's prior commitment of their remote unit for the Boston Pop Series.

We had two unilateral feeds from Philadelphia, a feed from WETA in Washington, D.C., plus a feed from the Governor in Ohio, all with Sulzer units.

Everything was going well until Massachusetts Bell cross patched NBC's John Chancellor Show and PBS' Advocates. Needless to say, this was a startling revelation on our monitors in Master Control at WGBH. We hadn't gone on the air yet, so we were able to get this straightened out on our hot line to telco, and despite Massachusetts Bell, the coverage was successful.

The Ohio Primary followed the aforementioned format pretty closely with ABC and NPACT Pooling feeds from Columbus, Ohio and Houston, Texas.

California was the last primary and naturally, our best. Bud Untiedt, Vice President of Engineering at KCET and his most capable staff were largely responsible for NPACT's excellent performance. KQED in San Francisco, also contributed a great deal to the California Primary coverage.

With the last of the primaries, could the first of the national conventions in Miami Beach be far away? Not really, so back to Washington to make preparations for our departure for the convention site in Florida.

NPACT decided to produce all of their shows from the convention hall in Miami Beach. Integrating the following shows into the week's convention coverage schedule. Washington Week In Review; Anatomy of a Convention, A 90 Minute Special; Firing Line; A Public Affair; Thirty Minutes with Elizabeth Drew; nightly updates and summaries. Further, NPACT had made arrangements with European Broadcast Union, to allow them to use our facilities to make nightly feeds via the satellite. UPI used our facilities to transmit their pictures to New York and Washington. In my spare time I slept.

NPACT had engaged South Carolina ETV's remote unit and technical and production personnel. The SCETV remote unit under the direction of Charles Morris, Director of Operations, provided the following technical equipment; three GE400 Cameras, two Ampex VR1200 Tape Machines. Two of the GE Cameras were installed in camera baskets above the convention floor. The third camera would be installed in a studio to be constructed inside the convention hall. A fourth camera, A PC70, was obtained from WETA, Washington, D.C. The fifth camera, a PCP90, and base station, with a four man crew was furnished by WGBH, Boston. The PCP90 would do double duty, utilized in the studio and in the field; a VR3000 came with the unit, making it a flexible tool.

WNET, New York, supplied a Vidifont Character Generator and technician to set it up. United Airlines supplied two 450 MHZ Comco Communications and IFB Systems.

A Black and White Vidicom Camera for use in recording the candidate's tote board, and last and certainly not least, the two PBS Audio and Video Transmission Racks.

As it would be impossible to install all of this extra equipment in the SCETV remote unit, an eight by forty foot house trailer was rented and placed adjacent to the remote unit.

To accommodate the intense July heat and humidity in Miami, five more tons of air conditioning were added to the existing three tons supplied with our engineering trailer. An NPACT studio and news room were set-up by placing two eight by forty foot house trailers side by side within the convention hall. The center walls of the trailers were removed to form an eighteen by forty foot studio area. Twenty-two by eighteen feet of the roof was raised to accommodate a lighting grid. Eight tons of air conditioning was added to dissipate the heat load of the lighting.

With the truck and trailers in position, installation of equipment and cables were next on the agenda. Four thousand feet of TV81 Camera Cable, fourteen thousand feet of audio cable, four thousand feet of video cable and four thousand feet of Tri-ax for the PCP90 were placed in various areas of the vast Miami Convention Center. Each camera location was accompanied by audio and IFB lines.

The video system consisted of camera outputs from the three cameras and the vidifont in the engineering trailer to the remote unit switcher. Program video from the remote unit to nine locations in the studio trailers for monitoring purposes. An RF system for off air monitoring. Video circuits to and from Southern Bell and AT&T Toll. Chroma key was used to simulate the correspondents looking over the convention floor. Horizontal drive, vertical drive, blanking, sync and sub-carrier had to be distributed from the remote unit to the engineering trailer.

The audio consisted of eight low level mic lines from the studio trailer. High level lines from Pool audio, and each camera location. Two Vega Wireless Mics from the convention floor. Studio address and foldback from the remote unit to the studio. Six IFB lines. Patchable IFB was available to the camera locations and to the 450 MHZ wireless system used in conjunction with the RF mics from the convention floor.

The complexity of wireless microphones on a convention floor with every network and independent each using five or six wireless mics and associated communications systems is....WILD!

In an effort to avoid conflicts on the same frequencies, an RF committee was formed in advance to allocate specific frequencies to all who would need them. FCC licenses were required. We discovered that there were many illegal systems in use in the hall and no way to police the culprits.

The FCC had field representatives at the convention site; and whenever these illegal systems were discovered and reported to the FCC, they were shut down, but believe me, it was hectic.

The telephone and communication system installed for NPACT consisted of twelve business lines terminating on sixteen six button key sets in the studio, news room, remote unit and engineering trailer. PL's were ordered for the same areas, and four locations on the convention floor. There were so many telephone instruments in the production area of the SCETV remote unit and the PBS engineering trailer that wall unit instruments were installed on plywood panels and mounted to the walls, twenty-three total. We looked like a bookie joint.

The use of technical facilities and manpower for the time preceeding and during the convention was horrendous. When we were not rehearsing or taping segments for future shows, feeding EBU to the satellite, or UPI transmissions, we were on the air, and if there was any time left over, we were editing tape. This left little time for maintenance or correcting system breakdowns. There were many times that I wondered which would breakdown first; the equipment, or the personnel? I can't say enough about the South Carolina crew. They gave 150%.

Somehow, some way, Thursday night arrived and the Democratic National Convention came to a close. We locked the trailer doors and staggered back to our respective homes, knowing that in a few weeks, we would have to return to Miami Beach and start all over again with the Republican National Convention.

Of course, you all know what chain of events took place subsequent to the Democratic National Convention. Senator Eagleton withdrew and the Democrats were forced to re-convene in Washington, D.C., with their Mini-Convention and select a new vice-presidential candidate.

NPACT did not decide to cover this convention until the Sunday preceeding the Tuesday event. Where was all of our equipment? In Miami, of course. I made a frantic phone call to a friend in Miami who was good enough to brave the many armed guards at the locked convention center and retrieve the vidifont and IFB systems. This was made even more complicated by the fact that this poor "Good Samaritan" didn't know what a vidifont or an IFB looked like. Many phone calls later, they were packed and on their way to Washington, with no time to spare.

WITF in Hershey, Pennsylvania was brought in to supply the technical facilities and manpower as WETA had prior commitments.

This time, NPACT had selected a small room overlooking the main ballroom in the Sheraton Park Hotel as its anchor position. Actually, this room was a spot light operator's loft.

Four cameras would be set-up, two in the anchor area and two on camera platforms in the ballroom. Here again were priorities for telephones and PL's video and audio lines. The telephone company was still installing lines when we went on the air and some of them never were operational. We made do.

Necessity is the Mother of Invention: our studio loft above the main ballroom had absolutely no air conditioning; so suddenly we learned a great deal about installing air conditioning in a room without outside access. Fortunately, I found a local air conditioning firm that took pity on my plight and we put our heads together and came up with a two part air conditioner with the compressor outside and the coils and fan inside our room. The only connection between the two units was the copper tubing feeding the Freon. The access was through a six inch conduit in the wall to the outside. All camera audio and IFB cables would also have to pass through this small opening.....

NPACT would cover the entire two day Mini-Convention from "Gavel-to-Gavel"....concluding each day with a three-quarter hour wrap-up. I can't say enough about the WITF personnel who really came through in a tight situation.

With the second Democratic Convention behind us we prepared to return to Miami Beach for the Republican National Convention.

Telephone orders would have to be revamped to better accommodate the requirements of NPACT.

Upon our return, we fired up the SCETV equipment and found that the Miami heat had taken its toll. We put in many hours of maintenance and repair to re-align the equipment.

NPACT's "Gavel-to-Gavel" coverage was so well received on the Mini-Convention in Washington, that they would go it again at the Republican National Convention. This, on the surface, would appear to complicate our technical requirements. In fact, it did not. The same production schedules and shows were adhered to with only the omission of the EBU satellite feeds. NPACT had become a member of Pool video. Martin Clancy, the new Executive Producer of Special Events, had made a trade agreement with a local

Miami television station to use their camera located across the street from the convention center, with a "Bird's Eye View" of the demonstration area. We, in turn, would furnish them a convention floor feed from our cameras in the baskets for their local news show. This station was the local ABC affiliate which meant that our feed would come through the ABC Network Master Control at the convention hall. As we were sync locked to Pool video and the ABC affiliate's camera would be locked to Pool, the only timing difference would be the video line from ABC Master Control to our engineering trailer, transmission area. This problem was solved by adding delay and equalization to the Pool feed to which we were locked.

Everything went very well for the three day convention.

In conclusion: I want to mention key people in making all of this possible. Evans Wetmore, PBS Design Engineer and Fred Martin, PBS Technical Supervisor, two dedicated and talented young men who were my right arm.....

It was an extraordinary experience. It meant a lot of traveling, much planning, many problems, many solutions, new friends, renewal of old friendships, a comraderie that will never be forgotten, for when one of us from the four networks needed something, everyone was eager to help. We gained experience that we shall always be able to reach back for, to meet our next challenge. It meant getting "tear gassed", surviving on endless meals of salami sandwiches, heat, sixteen to eighteen hour days of hard work, but put it all together and what it really all means is: we set our goals pretty high for what we had to work with time wise and dollar wise, and we accomplished the near impossible....thanks, in deed, to a lot of wonderful people. Especially, Dan Wells, who backed me all the way.

THANK YOU